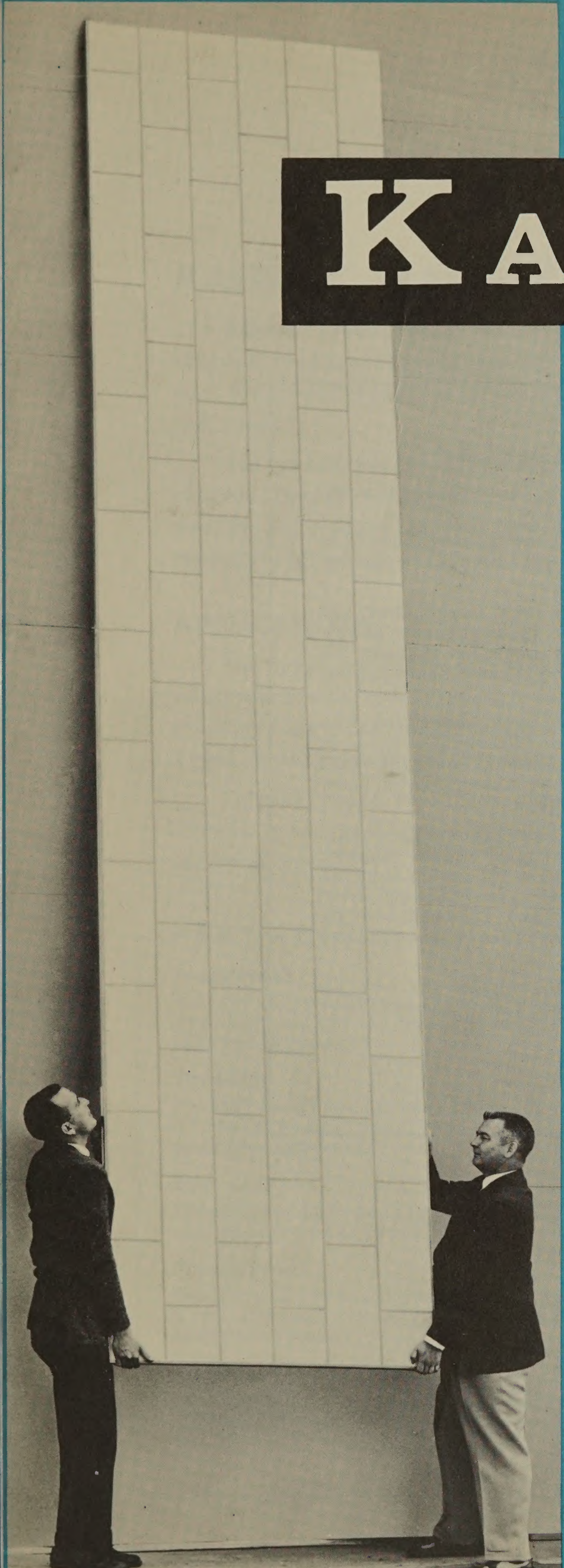


KALWALL®

TRANSLUCENT STRUCTURAL PANELS

for spandrel, curtain, window or
interior walls as well as
structural roofs.

TECHNICAL DATA

applications
features
dimensions
test data
joint systems
opaque panels
skylights
specifications

KALWALL® CORPORATION
MANCHESTER, NEW HAMPSHIRE

KALWALL® PANELS*

A product designed and produced by Kalwall® Corporation, Manchester, N. H.

These panels are a new concept for the building industry in its ever-growing awareness of speed and unlimited decorative possibilities.

Kalwall® Corporation, by using the latest in equipment and know-how, is producing a panel with all the requirements of custom attention, manufactured under mass production methods. We are proud to present this unique application in panel-manufacturing, the custom standardized panel.

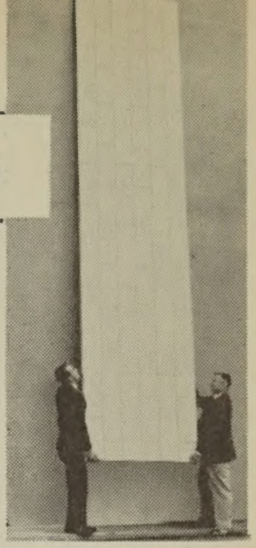
To date, over 175 buildings have been constructed with Kalwall® translucent panels including the fabulous 72,000 sq. ft. translucent roof of the United States Pavilion at the Brussels World's Fair. Another 500 installations are currently either under construction or specified.

Five years of intensive testing and development, have resulted in the present day Kalwall® panel. Testing of various sandwich panels that included field installations of a TV station atop Mt. Washington in New Hampshire; a tow boat on the Mississippi River; large trailer truck vans, etc. This in-use data, combined with the developer's 20-year background in the field of lamination, produced the product being marketed today.

This booklet has been published to acquaint you with the technical details about Kalwall® panels and their installation.

Kalwall — Reg. U. S. Patent Office

**Patented & Patents pending*



KALWALL® TRANSLUCENT PANELS

Kalwall® Translucent panels are a rigid sandwich structure consisting of a fiberglass reinforced polyester face and aluminum I-beam extrusions as the basic core. The fiberglass sheet facings are welded to the core of aluminum under heat and pressure.

The inherent strength of the Kalwall® panels is due to its true sandwich construction. Through this construction, the I-beam is not only used as a load-bearing member, but produces an ideal edge banding, which is then incorporated in a suggested joint system for the utmost in rigidity in actual installation.

APPLICATIONS

The design possibilities with Kalwall® panels are unlimited. They are ideal for structural walls, both interior and exterior as well as translucent roofs. Esthetically, they make it possible to combine a decorative pattern of light and color with a rigid, durable, maintenance-free surface.

Kalwall® panels have been incorporated with great success in schools, churches, gymnasiums, airport buildings, stores, residences, and commercial buildings of all types.

FEATURES

Translucent
Kalwall® panels diffuse light so efficiently that even direct sunlight can be converted to even, glare-free illumination.

Structural
Kalwall® panels are unusually strong and rigid in relation to their weight due to the unique sandwich construction.

Low Cost
Installation is rapid due to lightweight and giant size. Minimum on-the-site labor.

Shatterproof
The fiberglass reinforced polyester faces welded to the aluminum I-beam grid account for its shatterproof qualities.

Versatile
Adaptability to many joint systems makes installation easily applied to any type of construction.

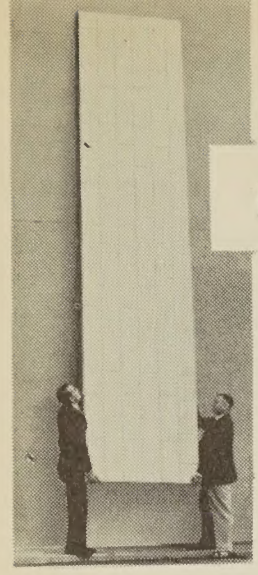
Lightweight
Kalwall® panels weigh only 1.42 lbs. to 1.60 lbs. per sq. ft. — depending on thickness.

Insulation
Kalwall® panels have a good insulation value as shown by the average low "U" factor of 0.40.

Low Maintenance
Kalwall's® durable nonporous surface resists the elements, acids, alkalies and common solvents.

Modular Units
The large structural standard units answers modular demands of modern building.

Esthetic
Kalwall® translucent colors, combined with shadow lines from internal grids, create a unique ever-changing textural effect unduplicated by any other building material.



KALWALL® PANEL DETAILS

CORE*

The core of the Kalwall® Translucent panels consists of extruded 6063-T5 aluminum I-beams assembled with a mechanical locking system. These I-beams were developed for the best possible strength available in this form of grid core construction. After an exhaustive survey among architects and leading designers, this unique pattern was developed to satisfy most requests governing translucent panels.

Our standard grid pattern is 8″ x 20″ and is used in our standard panels. This size can be varied upon special quotation.

BONDING

The Polyester fiberglass faces are bonded to the aluminum grid core under heat and pressure. The resin type waterproof adhesive that is used develops a bond of over 400 psi under dynamic tension. Modern control methods insure uniform bonding while "life" tests show the bond actually *gains* strength with aging.

FACING

Kalwall® panel facing material is a thermosetting laminate of polyester resin and fiberglass produced to rigid Kalwall® specifications for color, thickness, and strength. It is stronger than metal of equal weight, and highly resistant to shattering, crazing, fading, sharp blows, and vibrations.

Facing materials are light in weight (approx. 8 oz./sq. ft. for standard .060 thickness) — contain 2 ounces of glass per sq. ft. Tensile strengths of 10,000 and 12,000 psi are basic averages.

Facing material coefficient of expansion is approximately the same as aluminum. Temperature ranges from -40 to +175 have little or no effect on its physical properties.

Faces are chemically resistant to acids, alkalies, and common solvents.

COLORS

Kalwall® panels are available in 7 basic colors:

White	Red	Light & Dark
Crystal	Green	
Beige	Blue	
	Yellow	

Color chips are available from your local distributor or from Kalwall® directly.

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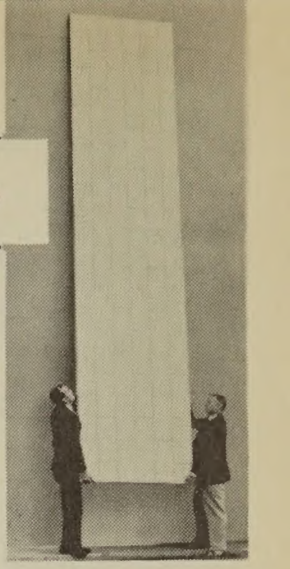
*Patented & Patents pending

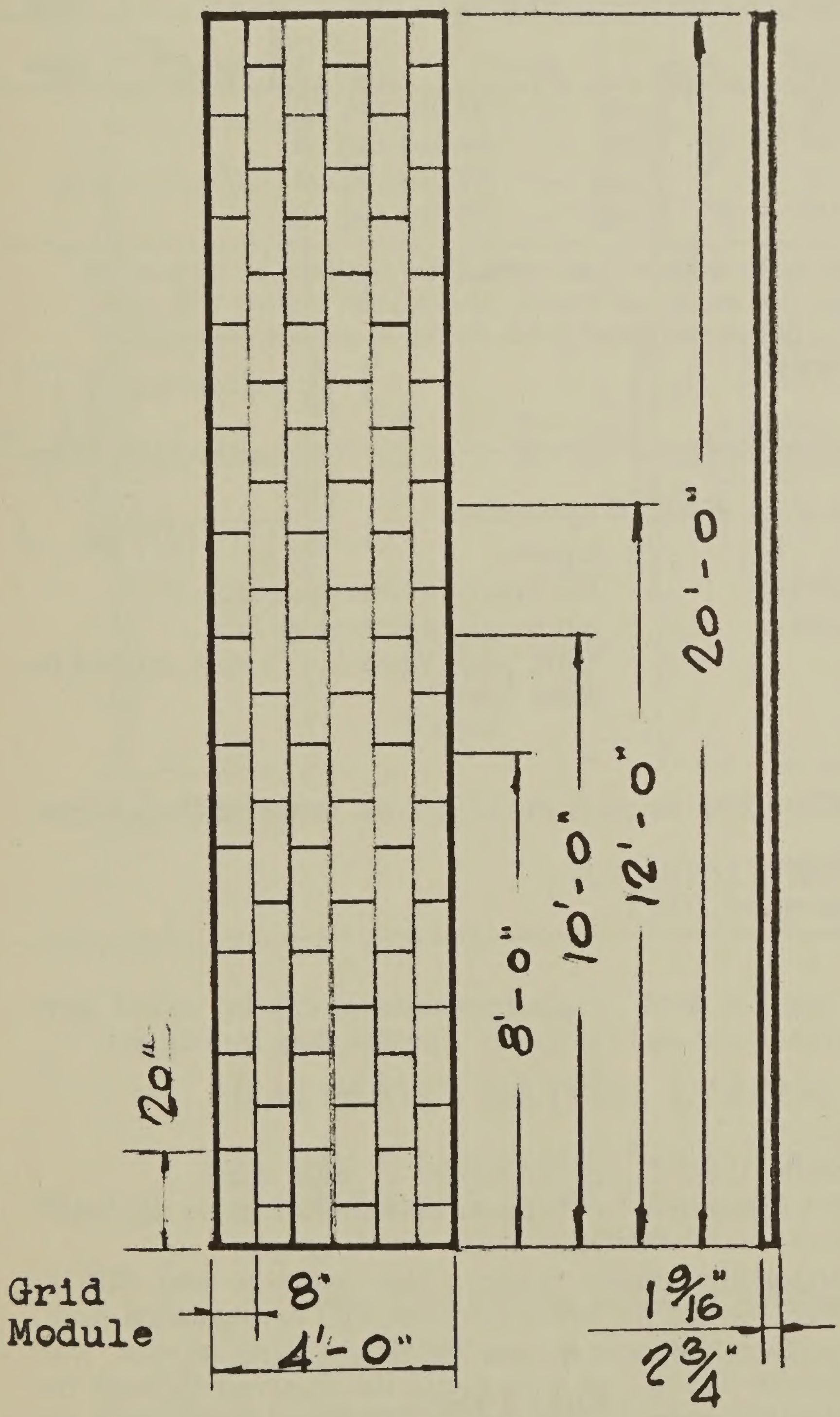


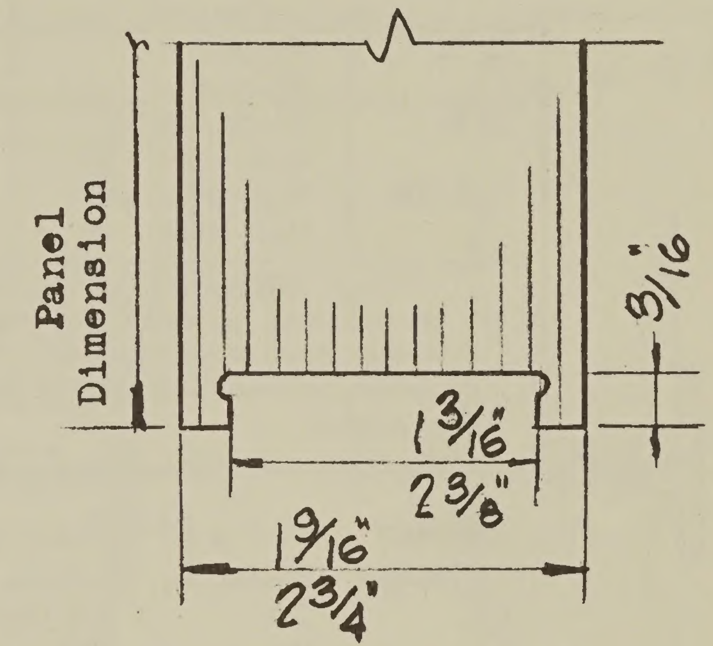
PANEL DIMENSIONS

SIZES: Standard panel sizes are as follows:

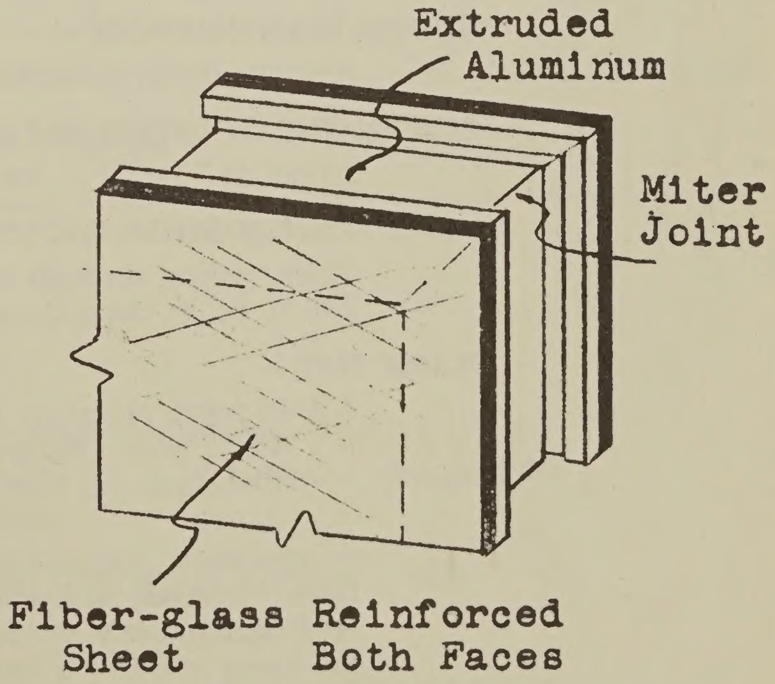
4′ x 8′ x 1-9/16″ or 2-¾″
4′ x 10′ x 1-9/16″ or 2-¾″
4′ x 12′ x 1-9/16″ or 2-¾″
4′ x 20′ x 1-9/16″ or 2-¾″

It should be borne in mind that standard size panels will be more economical due to production economies.



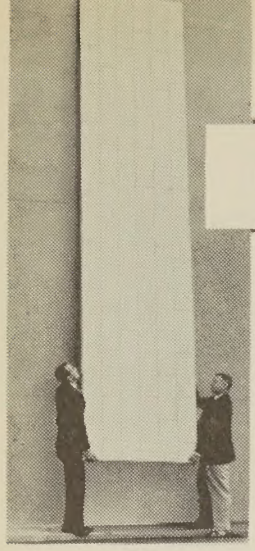


SECTION AT EDGE



VIEW OF CORNER

Note: On 8" And 12' size Grid Size Is Not Full Pattern At Ends



TEST DATA

Tests for this brochure were conducted by both Kalwall® Corporation and by an independent source. All these tests are available upon request.

TRANSLUCENT PANEL SUGGESTED MAXIMUM SPANS

Panel Thickness	Inter-panel Batten System	Load lbs. per Sq. Ft. 10	20	30	40	50	60
1-9/16	2″ x 1-½	11′	8.5′	8′	6.5′	6′	6′
2-¾	2″	15′	13.6′	12′	10′	8.5′	8′
2-¾	2″ with Box Channel	19.5′	15.5′	13.5′	12′	11′	10.5′
2-¾	Special Stiffeners	20′*	20′*	20′*	20′*	20′*	20′*
2-¾	Supported all four sides	0′ to 8′ Long — 200 lbs./sq. ft. 10′ to 20′ Long — 150 lbs./sq. ft.					
1-9/16	Supported all four sides	0′ to 8′ Long — 50 lbs./sq. ft. 10′ to 20′ Long — 30 lbs./sq. ft.					

Note — Heavier loads and longer spans may be used with other systems of supporting or stiffening the panel. For example, the use of an I-beam at the joint system will allow longer spans at greater loads. Also, a horizontal wind brace could be used across vertical panels, fastened through the joint system.

** or as specified*

IMPACT — 7-¼″ x 12″ x 2-¾″ thick KALWALL® specimen

Results:	Impact-Ft. lbs.	Deflection	Remarks
	70	.14″ top member	No break in fiberglass face.
	90	.30″ top member	No break in fiberglass face. Glue bond broken 1/3 way around on front face.

SOUND TRANSMISSION —

Average transmission loss of 29 to 32 decibels in the normal range of frequencies.

COEFFICIENT OF LINEAR EXPANSION —

About ⅛″ in 10 ft. for a change of 100°F.

LIGHT TRANSMISSION FACTOR —

Transmission through white panel is 30%. Light transmission can be varied from 5% to 65%, depending on color, face and thickness. Further data by request.

FLAME TEST —

ASTM Spec. Numbers E 108-55T

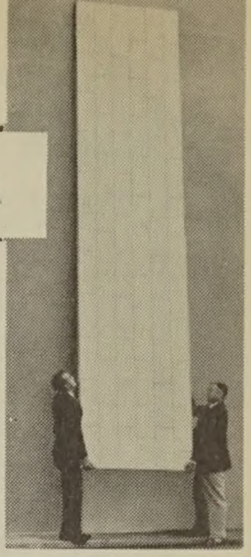
Conditions: Burning brands Type C. applied under 12 mile wind.

Conclusions: Flame not propagated by Type C brands falling on Kalwall® panels.

A specimen was placed horizontally above burner, four minutes and 800°F. flame observed on lower surface, burned for seven minutes, and extinguished itself. At fifteen minutes the upper surface temperature was 255°F. At thirty minutes with the lower at 1850°F. and upper at 325°F., no hole could be observed through the lower surface. After sixty minutes upper surface had a "browned spot" with the temperature at 325°F.

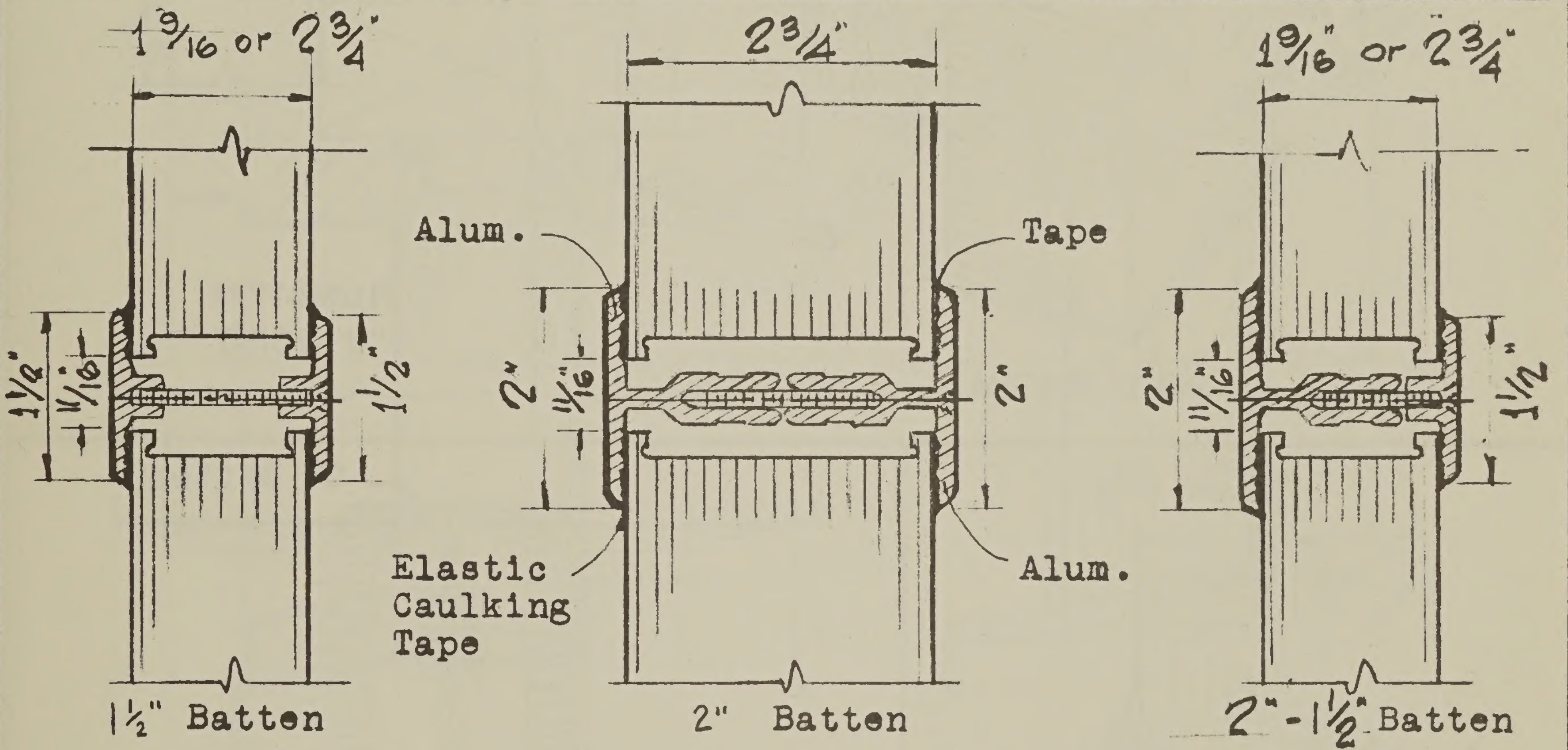
HEAT TRANSMISSION FACTOR —

The overall coefficient "U" was found to average 0.40. This figure can be varied if necessary.



JOINT SYSTEMS

The following diagrams and specifications are suggested as possible joint systems for the installation of Kalwall® panels.



1½" Batten

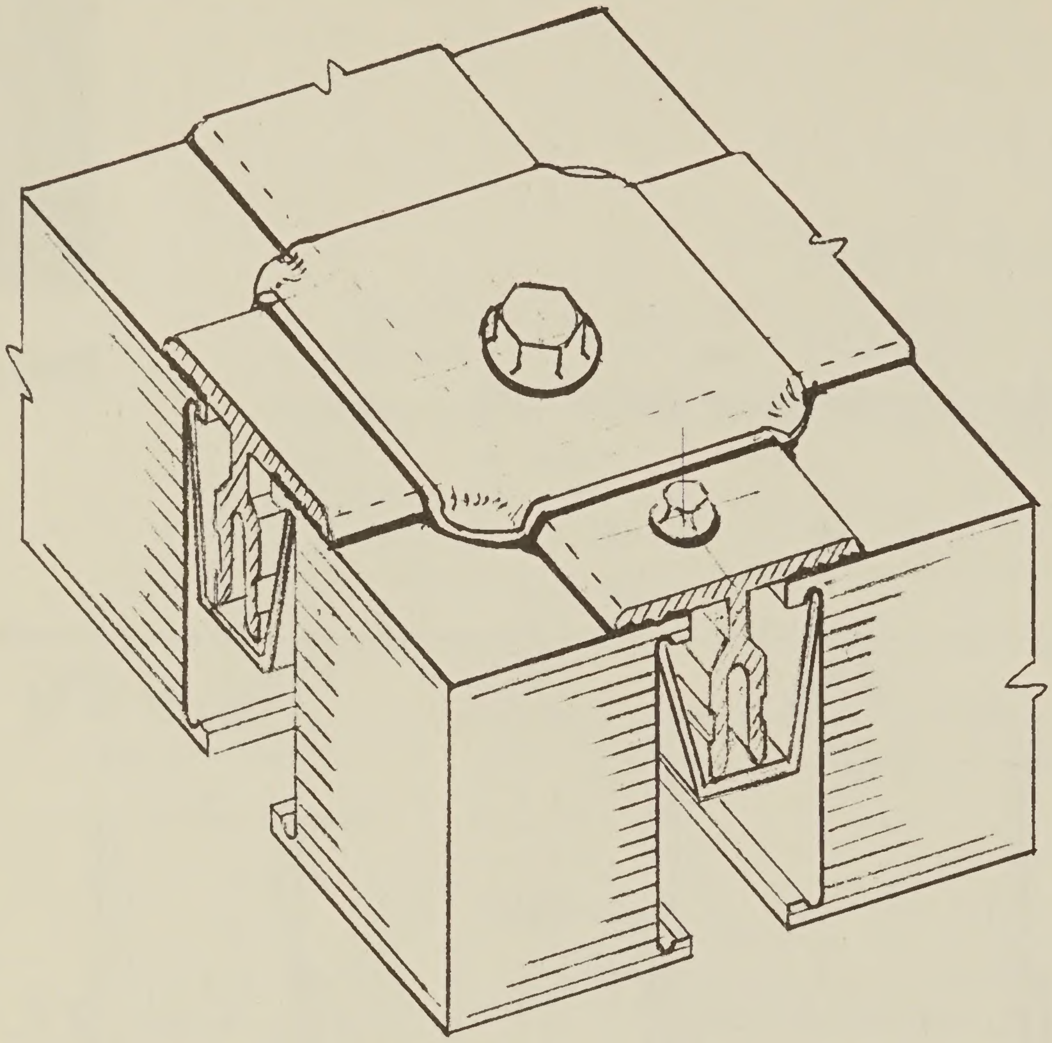
2" Batten

2"-1½" Batten

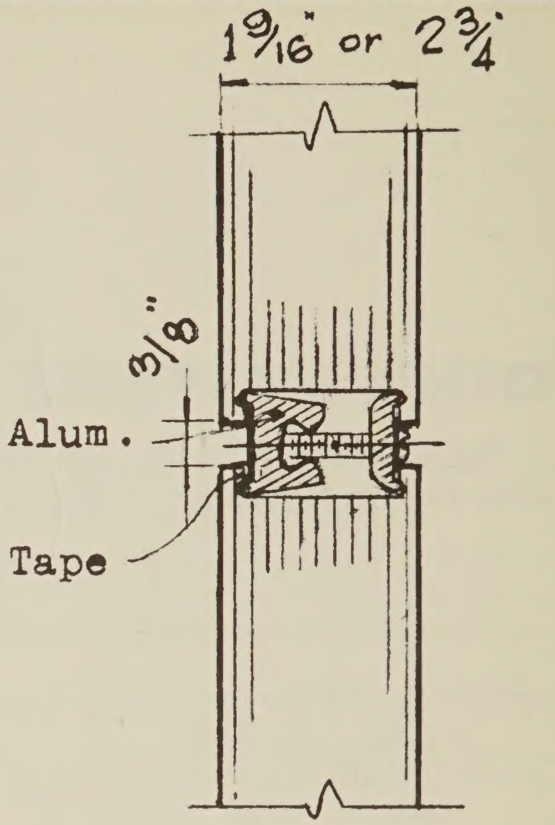
KALWALL® BATTEN SYSTEM

KALWALL® BATTEN SYSTEM

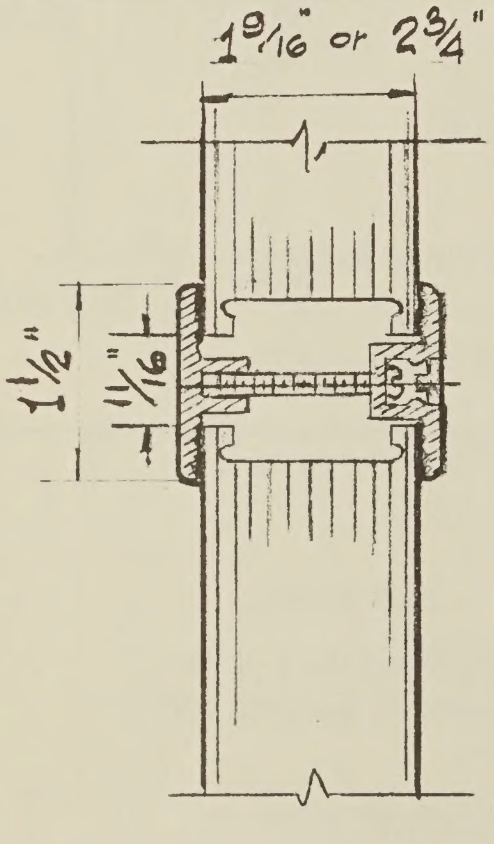
1. The 1-½″ batten and 2″ x 1-½″ batten is designed for joining either the 1-9/16″ or 2-¾″ thick Kalwall® Translucent panels. The 2″ x 2″ batten is designed for joining 2-¾″ thick Kalwall® Translucent Panels.
2. These joint systems allow for expansion and contraction within the joint.
3. These joints can be supplied in one piece up to 20′ in length.
4. The use of Kalwall® elastic caulking tap is recommended on all exterior installations. For best appearance trim off excess squeeze-out with a putty knife.



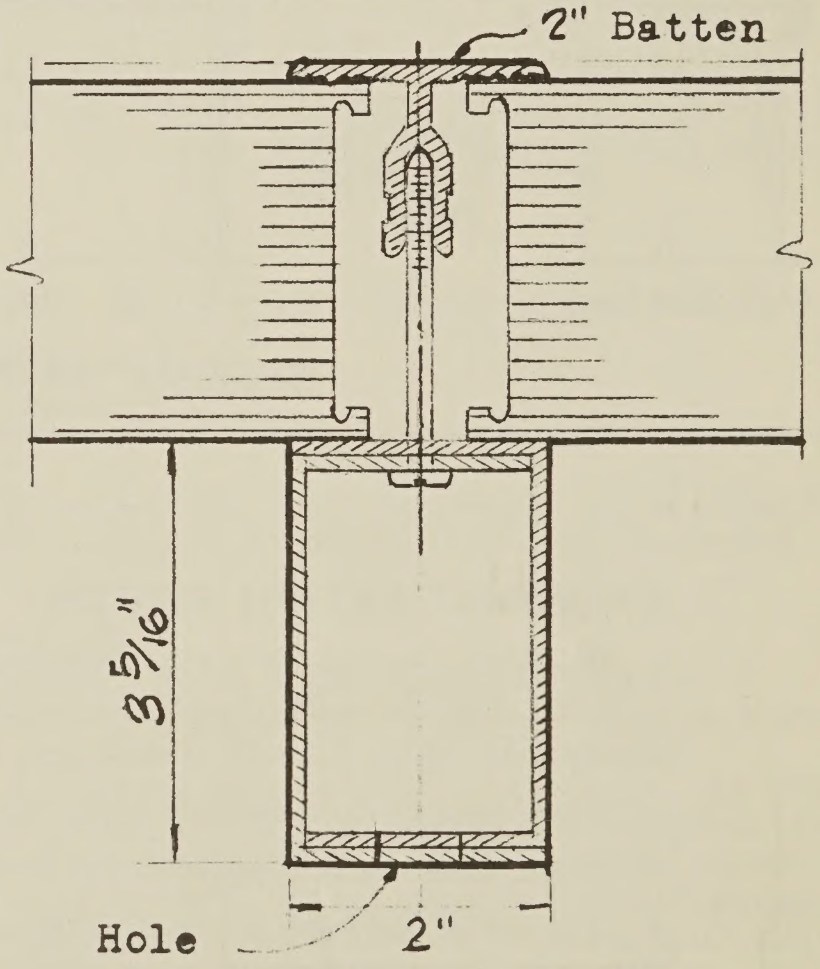
ROOF SYSTEM



FLUSH-TYPE "U"-JOINT



1½" BATTEN ALTERNATE SYSTEM



3" CHANNEL USED AS STIFFENER

AVERY

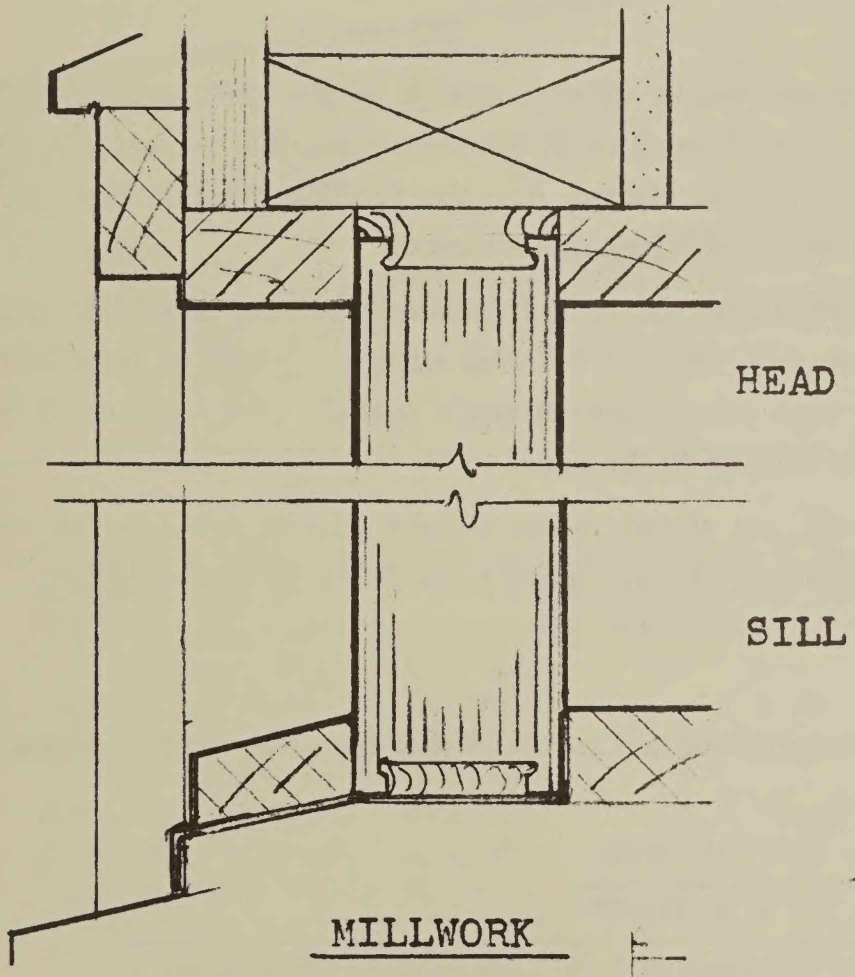
SUGGESTED ALLOWANCE TABLE

For Openings to Receive Panels

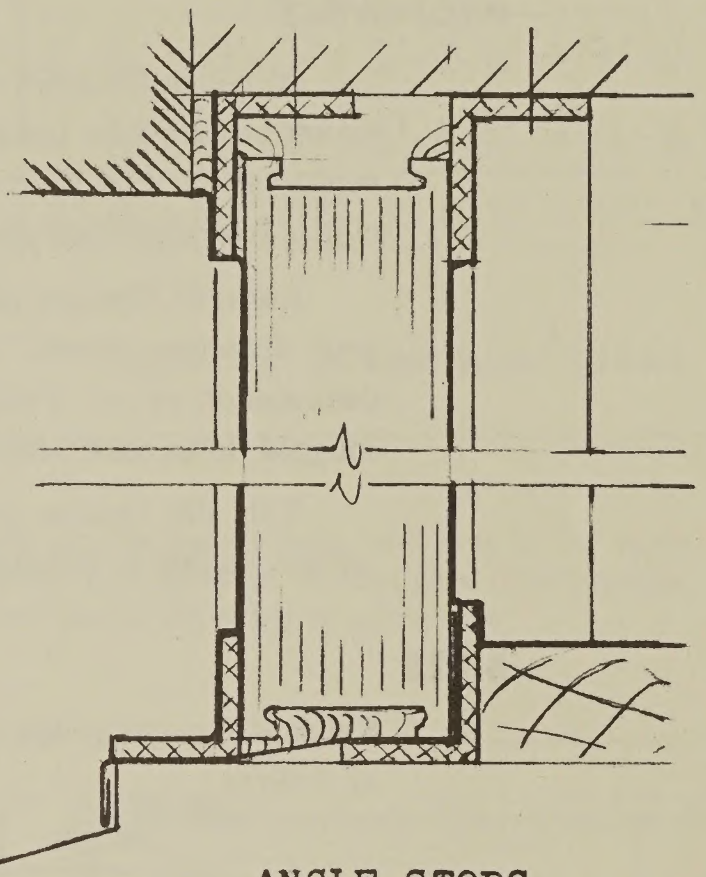
dimension	4'-0"	8'-0"	10'-0"	12'-0"	20'-0"
opening	+1/4"	+1/4"	+3/8"	+3/8"	+1/2"

Panel Tolerance
±3/32" (±.10")

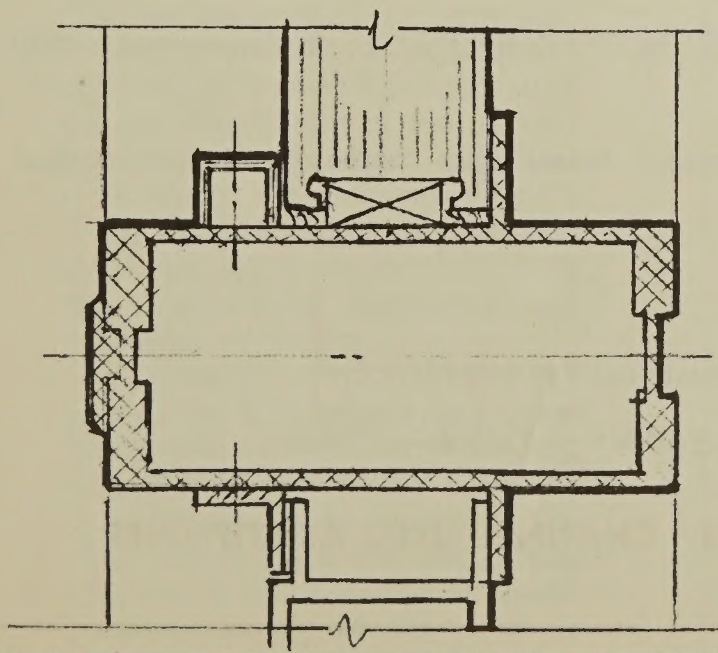
Expansion and Tolerance Allowances are Total for Opening and Suggested Minimum.

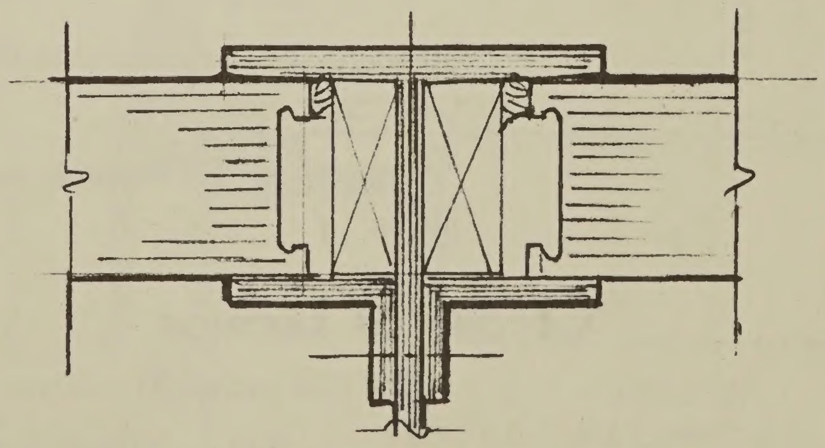


MILLWORK DETAIL



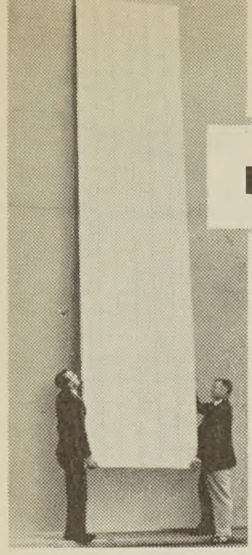
ANGLE STOPS DETAIL





STRUCTURAL MULLION

CURTAIN WALL SYSTEMS
VARIOUS MANUFACTURERS



KALWALL® OPAQUE PANELS

Kalwall® Opaque panels are a rigid sandwich structure consisting of fiberglass reinforced thermosetting faces laminated directly to a kiln-dried end grain balsa wood core. Upon special quotation Kalwall® can also bond face sheets to a variation of other-type core materials.

PROPERTIES

Although Kalwall® Opaque panels are very light in weight, they are extremely strong and rigid by comparison. They furnish excellent insulation — are not adversely affected by wide temperature change. And the excellent weather resistance of the fiberglass face eliminates ordinary maintenance.

Kalwall® Opaque panels are so strong and resilient they can be used to span great distances. Panels "breathe" with the building with no danger of permanent deformation or set. Their high compressive strength permits joint systems to be snugged down tight without damage to the panel.

Kalwall® Opaque panels can absorb blows without adverse effect — an important quality in buildings where thrown stones are a factor to be considered.

SIZES

Kalwall® Opaque panels are produced in a variety of lengths, widths and thicknesses as follows:

Width:	up to 48″ wide
Length:	up to 8′ long**
Thickness:	¾″ through 2-¾″; aluminum edge banding available only in 1-9/16″ and 2-¾″ thickness.

Standard sizes are available in any of the above thicknesses or dimensions within the 4′ x 8′ scope.

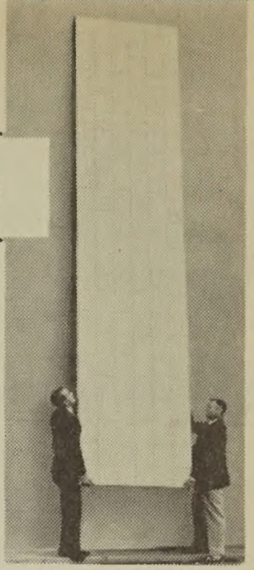
**Longer lengths available upon request, based upon loading and span requirements.

COLORS OF FACINGS

The face surface is available in 6 basic colors:

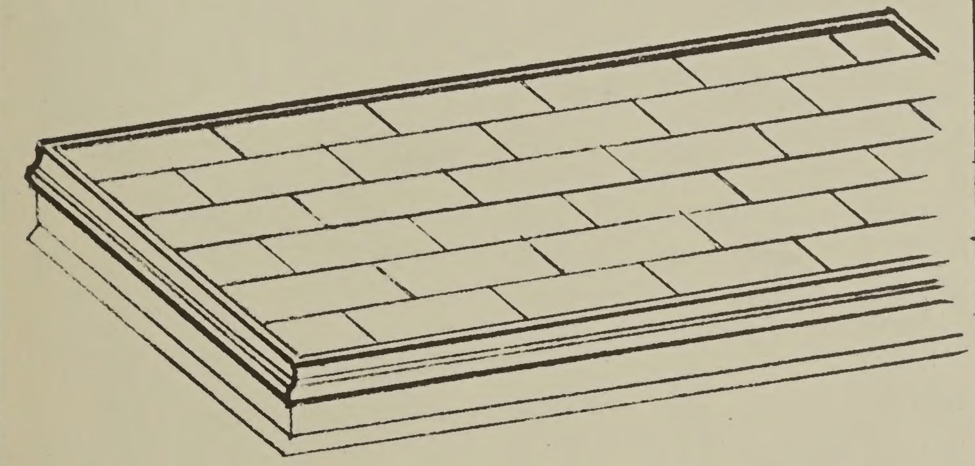
White — Rose — Green — Blue — Yellow — Beige

AVERY
CLASSICS
AT
6080
K11
195-9



KALWALL® SKYLIGHTS

Ever since Kalwall® translucent panels were introduced architects and engineers have found them a simple, effective method for constructing skylights. Now Kalwall® makes it even simpler by factory preassembling panels into a mitered and welded skylight frame. Skylight is installed by simply placing the assembly on a prepared curb — and fastening from within.



St'd. Panel	Inside Dimension*
4'-0" × 8'-0"	3'-8½" × 7'-8½"
4'-0" × 10'-0"	3'-8½" × 9'-8½"
4'-0" × 12'-0"	3'-8½" × 11-8½"
4'-0" × 20'-0"	3'-8½" × 19'-8½"

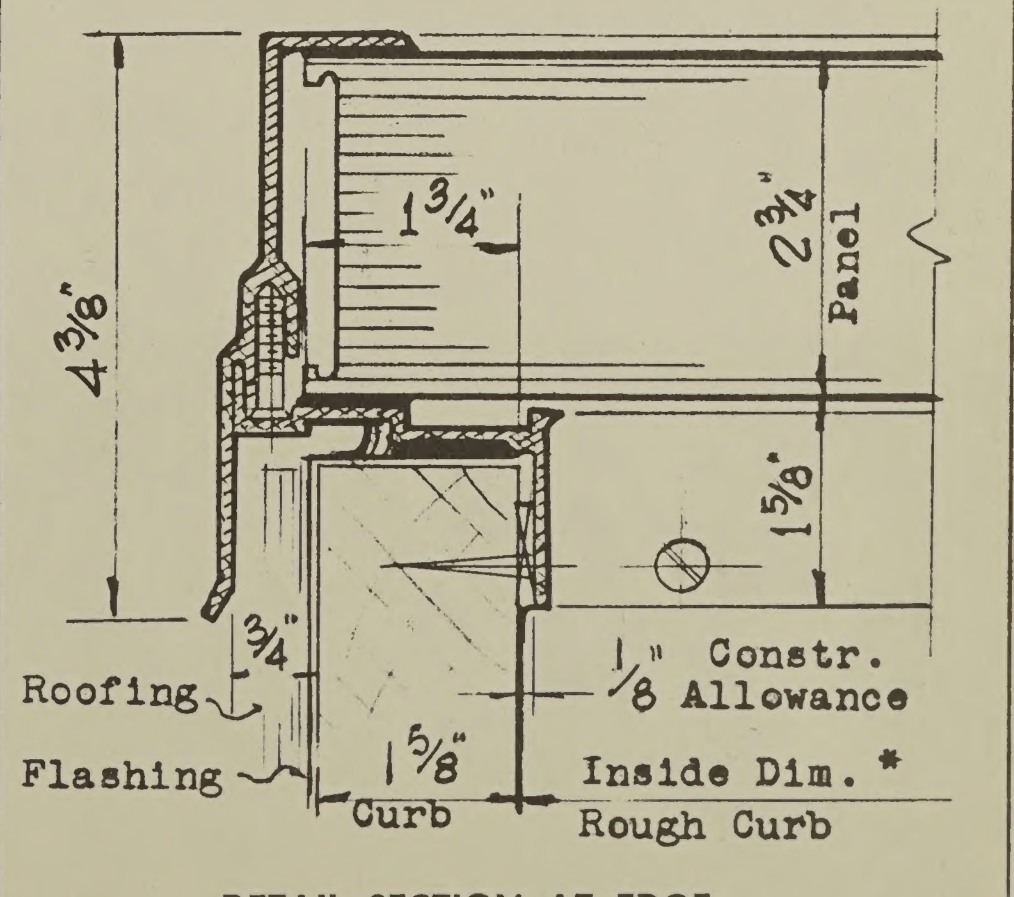
Special Sizes Available

The extraordinary light diffusion through Kalwall® panels causes infra red rays to be more uniformly distributed — eliminates hot spots so common to most types of skylights. The superior 0.40 "U" factor redces considerably both the heating and air conditioning requirements.

The basic high structural strength inherent in Kalwall® panel construction combined with its light weight results in a considerable savings of structural members. The pre-assembled skylight is available in up to 4′ widths. Length is limited by practicality of trucking into your area.

In combination with our special proven batten system there is no limit to the possible skylight size. It is now possible to build entire lightweight translucent roofs such as our installation of the 72,000 square foot roof of the American Pavilion at the Brussels World's Fair. Its possibilities as a roof for an entire sports stadium down to the smaller sizes illustrate its remarkable versatility.

Installation is rapid and positive due to its light weight and large panel size with a corresponding lessening of installation costs. As maintenance is no problem the first cost is the entire cost. Even dirt which may accumulate on the exterior surface of the panel is not discernible on the interior due to the light diffusion qualities.



DETAIL SECTION AT EDGE

KALWALL®

TRANSLUCENT STRUCTURAL BUILDING PANELS

Short Specification — Panel

Kalwall® panels shall be as manufactured by Kalwall® Corporation, 43 Union Street, Manchester, N. H. Panels shall consist of a patented locked aluminum I-beam core grid (8″ x 20″), and reinforced 1/16″ translucent skins are to be welded with waterproof bond under heat and pressure process at the factory under controlled conditions. Color of bond to be black.

Note: Long specifications available on request.

Short Specification — Skylights

Kalwall® skylights shall be manufactured by Kalwall® Corporation, 43 Union Street, Manchester, N. H. Panels shall consist of a patented locked aluminum I-beam core grid (8′ x 20″), and reinforced 1/16″ translucent skins are to be welded with waterproof bond under heat and pressure process at the factory under controlled conditions. Color of bond to be black. The mitered and welded frame shall be of extruded aluminum and completely assembled and sealed to the panel at factory.

Note: Long specifications available on request.

KALWALL® CORPORATION
MANCHESTER, NEW HAMPSHIRE

All data in this brochure is correct and accurate to the best of our knowledge.
However, no warranty is expressed or implied.

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